Coupled model of Integrated Dynamics through Earth's Atmosphere (IDEA)

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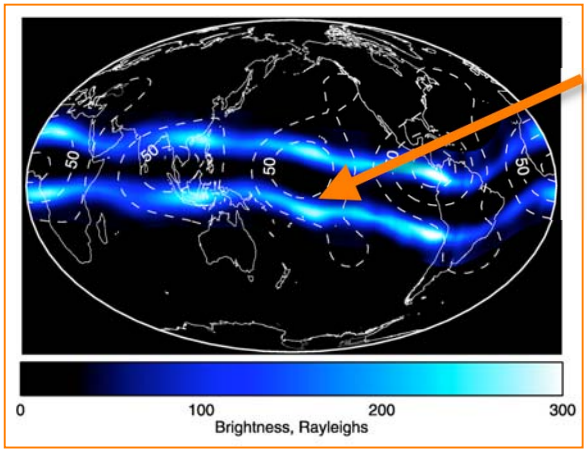
IDEA combines a whole atmosphere model (WAM) with a global ionosphere/plasmasphere (GIP) and is designed to simulate the impact of lower atmosphere waves on the thermosphere and ionosphere. Gravity and planetary waves modulate the propagation of tidal amplitudes introducing temporal variability and spatial structure **[Fuller-Rowell et al. 2008]**



Immel et al. (2006) suggested that DE3 propagating from the lower atmosphere into the thermosphere is responsible for the four peak longitude structure of 135.6 nm atomic oxygen airglow observed by IMAGE

*IDEA simulation of the diurnal eastward migrating wavenumber 3 (DE3) [**Akmaev et al. 2008]** is in excellent agreement with measurements by the SABER instrument on TIMED **[Forbes et al. 2008]***